TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

AN ORDER concerning the application Rio Grande LNG, LLC for new Air Quality Permit Numbers 140792, PSDTX1498, and GHGPSDTX158; TCEQ Docket No. 2018-1304-AIR

On December 12, 2018, the Texas Commission on Environmental Quality ("Commission") considered during its open meeting the requests for a contested case hearing and the request for reconsideration concerning the application by Rio Grande LNG, LLC for new Air Quality Permit Numbers 140792, PSDTX1498, and GHGPSDTX158. The Commission received timely hearing requests that were not withdrawn from the following persons or entities: City of Port Isabel, Town of Laguna Vista, Vecinos Para el Bienstar de la Comunidad Costera ("VBCC"), William Shoff Shrimpers and Fishermen of the RGV ("SFRGV"), Save RGV from LNG, Marianne Poythress, Rosemary Breedlove, and Joyce Marie Hamilton. The Commission received one timely request for reconsideration from John Young. The requests were evaluated under the requirements in the applicable statutes and Commission rules, including 30 Texas Administrative Code Chapter 55. The Commission also considered the responses to the requests filed by the Executive Director, the Office of Public Interest Counsel, and the Applicant; the replies filed by VBCC and SFRGV; all timely public comment; and the Executive Director's Response to Comments.

After an evaluation of all relevant filings, the Commission found that the requests for a contested case hearing and the request for reconsideration should be denied based on the Commission's Chapter 55 rules applicable to the application. The Commission determined to grant the application of Rio Grande LNG, LLC and to issue new Air Quality Permit Numbers

140792, PSDTX1498, and GHGPSDTX158 in the form recommended by the Executive Director. The Commission also adopted the Executive Director's Response to Public Comment.

NOW, THEREFORE, BE IT ORDERED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY that:

1. The requests for a contested case hearing and the request for reconsideration are DENIED;
2. The application of Rio Grande LNG, LLC is GRANTED;
3. Air Quality Permit Numbers 140792, PSDTX1498, and GHGPSDTX158 are ISSUED in the form recommended by the Executive Director for this application;
4. The Executive Director's Response to Public Comment is ADOPTED in accordance with 30 TAC Chapter 55; and
4. If any provision, sentence, clause or phrase of this Order is for any reason held to be invalid, the invalidity of any portion shall not affect the validity of the remaining portions of the Order.

TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY

Jon Niermann, Chairman

12/17/18
Date Signed

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

December 19, 2018

MR SHAUN DAVISON
SENIOR VICE PRESIDENT OF DEVELOPMENT AND REGULATORY AFFAIRS
RIO GRANDE LNG LLC
3 WATERWAY SQUARE PL STE 400
THE WOODLANDS TX 77380-3898

Re: Initial Permit
Permit Number: 140792
Rio Grande LNG, LLC
Rio Grande LNG and Rio Bravo Pipeline Facility
Brownsville, Cameron County
Regulated Entity Number: RN109222851
Customer Reference Number: CN605153907
Associated Permit Numbers: GHGPSDTX158 and PSDTX1498

Dear Mr. Davison:

This is in response to your Form PI-1 (General Application for Air Preconstruction Permits and Amendments) concerning the above-referenced project.

In accordance with Title 30 Texas Administrative Code Chapter 116, and based on our review, your permit is enclosed. This information will be incorporated into the permit files. Enclosed are general conditions, special conditions, and a maximum allowable emission rates table (MAERT). We appreciate your careful review of the permit and assuring that all requirements are consistently met. In addition, the construction and operation of the facilities must be as represented in the application.

This permit will be automatically void upon the occurrence of any of the following, as indicated in Title 30 Texas Administrative Code § 116.120(a) [30 TAC § 116.120(a)]:

1. Failure to begin construction within 18 months of the date of issuance,

2. Discontinuance of construction for more than 18 months prior to completion, or

3. Failure to complete construction within a reasonable time.

Upon request, the executive director may grant extensions as allowed in 30 TAC § 116.120(b).

This permit is effective as of the date of this letter and will be in effect for ten years from the date of approval.

In addition, you may be interested in taking advantage of free and voluntary technical assistance available through the Environmental Assistance Division (EAD), by calling 1-800-447-2827. The EAD offers confidential and non-regulatory assistance for applicants with technical, compliance, and environmental management needs; and may be able to help you reduce pollution and costs.

Re: Permit Number: 140792

If you need further information or have any questions, please contact Mr. Michael Cheek, P.E. at (512) 239-4936 or write to the Texas Commission on Environmental Quality, Office of Air, Air Permits Division, MC-163, P.O. Box 13087, Austin, Texas 78711-3087.

Sincerely,

Jon Niermann, Chairman
For the Texas Commission on Environmental Quality

Enclosure

cc: Air Section Manager, Region 15 - Harlingen
Air Permits Section Chief, New Source Review Section (6PD-R), U.S. Environmental Protection Agency, Region 6, Dallas

Project Number: 252949

Texas Commission on Environmental Quality
Air Quality Permit

A Permit Is Hereby Issued To
Rio Grande LNG, LLC
Authorizing the Construction and Operation of
Rio Grande LNG And Rio Bravo Pipeline Facility
Located at **Brownsville, Cameron County,** Texas
Latitude 26° 1' 34" Longitude−97° 15' 17"

Permits: 140792, PSDTX1498, and GHGPSDTX158

Issuance Date: 12-17-18

Expiration Date: December 17, 2028

For the Commission

1. **Facilities** covered by this permit shall be constructed and operated as specified in the application for the permit. All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. Variations from these representations shall be unlawful unless the permit holder first makes application to the Texas Commission on Environmental Quality (commission) Executive Director to amend this permit in that regard and such amendment is approved. [Title 30 Texas Administrative Code (TAC) Section 116.116 (30 TAC § 116.116)] [1]
2. **Voiding of Permit**. A permit or permit amendment is automatically void if the holder fails to begin construction within 18 months of the date of issuance, discontinues construction for more than 18 months prior to completion, or fails to complete construction within a reasonable time. Upon request, the executive director may grant an 18-month extension. Before the extension is granted the permit may be subject to revision based on best available control technology, lowest achievable emission rate, and netting or offsets as applicable. One additional extension of up to 18 months may be granted if the permit holder demonstrates that emissions from the facility will comply with all rules and regulations of the commission, the intent of the Texas Clean Air Act (TCAA), including protection of the public's health and physical property; and (b)(1)the permit holder is a party to litigation not of the permit holder's initiation regarding the issuance of the permit; or (b)(2) the permit holder has spent, or committed to spend, at least 10 percent of the estimated total cost of the project up to a maximum of $5 million. A permit holder granted an extension under subsection (b)(1) of this section may receive one subsequent extension if the permit holder meets the conditions of subsection (b)(2) of this section. [30 TAC § 116.120]
3. **Construction Progress**. Start of construction, construction interruptions exceeding 45 days, and completion of construction shall be reported to the appropriate regional office of the commission not later than 15 working days after occurrence of the event. [30 TAC § 116.115(b)(2)(A)]
4. **Start-up Notification**. The appropriate air program regional office shall be notified prior to the commencement of operations of the facilities authorized by the permit in such a manner that a representative of the commission may be present. The permit holder shall provide a separate notification for the commencement of operations for each unit of phased construction, which may involve a series of units commencing operations at different times. Prior to operation of the facilities authorized by the permit, the permit holder shall identify the source or sources of allowances to be utilized for compliance with Chapter 101, Subchapter H, Division 3 of this title (relating to Mass Emissions Cap and Trade Program). [30 TAC § 116.115(b)(2)(B)]
5. **Sampling Requirements**. If sampling is required, the permit holder shall contact the commission's Office of Compliance and Enforcement prior to sampling to obtain the proper data forms and procedures. All sampling and testing procedures must be approved by the executive director and coordinated with the regional representatives of the commission. The permit holder is also responsible for providing sampling facilities and conducting the sampling operations or contracting with an independent sampling consultant. [30 TAC § 116.115(b)(2)(C)]
6. **Equivalency of Methods.** The permit holder must demonstrate or otherwise justify the equivalency of emission control methods, sampling or other emission testing methods, and monitoring methods proposed as alternatives to methods indicated in the conditions of the permit. Alternative methods shall be applied for in writing and must be reviewed and approved by the executive director prior to their use in fulfilling any requirements of the permit. [30 TAC § 116.115(b)(2)(D)]
7. **Recordkeeping.** The permit holder shall maintain a copy of the permit along with records containing the information and data sufficient to demonstrate compliance with the permit, including production records and

operating hours; keep all required records in a file at the plant site. If, however, the facility normally operates unattended, records shall be maintained at the nearest staffed location within Texas specified in the application; make the records available at the request of personnel from the commission or any air pollution control program having jurisdiction in a timely manner; comply with any additional recordkeeping requirements specified in special conditions in the permit; and retain information in the file for at least two years following the date that the information or data is obtained. [30 TAC § 116.115(b)(2)(E)]

8. **Maximum Allowable Emission Rates**. The total emissions of air contaminants from any of the sources of emissions must not exceed the values stated on the table attached to the permit entitled "Emission Sources--Maximum Allowable Emission Rates." [30 TAC § 116.115(b)(2)(F)] [1]
9. **Maintenance of Emission Control**. The permitted facilities shall not be operated unless all air pollution emission capture and abatement equipment is maintained in good working order and operating properly during normal facility operations. The permit holder shall provide notification in accordance with 30 TAC §101.201, 101.211, and 101.221 of this title (relating to Emissions Event Reporting and Recordkeeping Requirements; Scheduled Maintenance, Startup, and Shutdown Reporting and Recordkeeping Requirements; and Operational Requirements). [30 TAC§ 116.115(b)(2)(G)]
10. **Compliance with Rules**. Acceptance of a permit by an applicant constitutes an acknowledgment and agreement that the permit holder will comply with all rules and orders of the commission issued in conformity with the TCAA and the conditions precedent to the granting of the permit. If more than one state or federal rule or regulation or permit condition is applicable, the most stringent limit or condition shall govern and be the standard by which compliance shall be demonstrated. Acceptance includes consent to the entrance of commission employees and agents into the permitted premises at reasonable times to investigate conditions relating to the emission or concentration of air contaminants, including compliance with the permit. [30 TAC § 116.115(b)(2)(H)]
11. **This** permit may not be transferred, assigned, or conveyed by the holder except as provided by rule. [30 TAC § 116.110(e)]
12. **There** may be additional special conditions attached to a permit upon issuance or modification of the permit. Such conditions in a permit may be more restrictive than the requirements of Title 30 of the Texas Administrative Code. [30 TAC § 116.115(c)]
13. **Emissions** from this facility must not cause or contribute to "air pollution" as defined in Texas Health and Safety Code (THSC) §382.003(3) or violate THSC § 382.085. If the executive director determines that such a condition or violation occurs, the holder shall implement additional abatement measures as necessary to control or prevent the condition or violation.
14. **The** permit holder shall comply with all the requirements of this permit. Emissions that exceed the limits of this permit are not authorized and are violations of this permit. [1]

[1] Please be advised that the requirements of this provision of the general conditions may not be applicable to greenhouse gas emissions.

Special Conditions

Permit Numbers 140792 and PSDTX1498 and GHGPSDTX158

1. This permit authorizes emissions only from those emission points listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates," (MAERT), and the facilities covered by this permit are authorized to emit subject to the emission rate limits on that table and other operating conditions specified in this permit. Also, this permit authorizes the emissions from planned maintenance, startup, and shutdown (MSS).

   If any condition of this permit is more stringent than the regulations so incorporated, then for the purposes of complying with this permit, the permit shall govern and be the standard by which compliance shall be demonstrated.

Federal Applicability

2. Affected facilities shall comply with applicable requirements of the EPA regulations on Standards of Performance for New Stationary Sources (NSPS), 40 CFR Part 60:

   A. Subpart A: General Provisions.

   B. Subpart Kb: The Terminal condensate storage tanks, Facility Identification Numbers (FIN) CT1 and CT2, will be subject to Standards of Performance for Volatile Organic Liquids Storage Vessels.

   C. Subpart KKKK: The Terminal combustion turbines will be subject to Standards of Performance for Stationary Combustion Turbines.

   D. Subpart IIII: The Terminal diesel-fired standby generators and fire water pump engines will be subject to Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

   E. Subpart JJJJ: Compressor Station 3 natural gas backup generators will be subject to Stationary Spark Ignition Internal Combustion Engines.

   F. Subpart OOOOa: Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015. The leak standards of this subpart shall apply to Compressor Station 3.

3. Affected facilities shall comply with applicable requirements of the EPA regulations on National Emission Standards for Hazardous Air Pollutants for Source Categories, 40 CFR Part 63:

   A. Subpart A: General Provisions.

   B. Subpart YYYY: National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines. Per 63.6095(d), new lean premix gas-fired stationary combustion turbines must comply with the initial notification requirements set forth in 63.6145, but need not comply with any other requirement of the subpart.

   C. Subpart ZZZZ: The Terminal diesel-fired standby generators, fire water pumps, and Compressor Station 3 natural gas generators will be subject to National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

4. Affected facilities shall comply with applicable requirements of the EPA regulations on Mandatory Greenhouse Reporting, 40 CFR Part 98:

A. Subpart A: General Provisions.

B. Subpart W: Petroleum and Natural Gas Systems.

Emissions Standards and Operating Specifications

5. Each diesel-fired standby generator and fire water pump engine located at the Terminal shall not exceed 100 hours of non-emergency operation per year, on a rolling 12-month basis. Each engine must be equipped with a non-resettable runtime meter.

6. Each natural gas-fired standby generator located at Compressor Station 3 shall not exceed 100 hours of non-emergency operation per year, on a rolling 12-month basis. Each engine must be equipped with a non-resettable runtime meter.

7. The diesel fuel fired in the standby generator and fire water pump engines located at the Terminal authorized in this permit shall contain no more than 15 parts per million (ppm) of sulfur by weight.

8. Fuel gas for the facilities authorized by this permit is limited to fuel from the Fuel Gas System which shall provide fuel containing no more than 0.01 grains total sulfur per 100 dry standard cubic feet (dscf) on an hourly average basis. These specifications do not apply to the acid gas which is burned in the Thermal Oxidizers (TO). The fuel gas system supplies primarily boil off gas (BOG) supplemented with pipeline quality natural gas from the pipeline system.

9. Upon request by the Executive Director of the Texas Commission on Environmental Quality (TCEQ) or any local air pollution control program having jurisdiction, the holder of this permit shall provide a sample and/or an analysis of the fuel or shall allow air pollution control agency representatives to obtain a sample for analysis.

10. The ground flare system shall be designed and operated in accordance with the following requirements:

    A. The flare system shall be designed such that the combined gas and waste stream to each flare meets the 40 CFR § 60.18 specifications of minimum heating value and maximum tip velocity under normal and, anticipated scenarios identified in the air permit application.

    B. Fuel for the flare pilots is limited to fuel gas provided by the Fuel Gas system.

    C. Two of the three ground flares shall be operated with a flame present at all times and/or have a constant pilot flame. The third ground flare is a redundant unit and is not required to maintain a constant pilot flame. The pilot flame shall be continuously monitored by a thermocouple, flame-ionization rod, acoustical monitor, infrared monitor, or other equivalent technology. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to within manufacturer's specifications, and shall be calibrated at a frequency in accordance with the manufacturer's specifications.

    D. The ground flares shall be operated with no visible emissions except during periods not to exceed a total of five minutes during any two consecutive hours.

    E. The permit holder shall install a continuous, pressure and temperature compensated, flow monitor that provides a record of the vent stream flow to the ground flares in units of standard cubic feet. The flow monitor shall be installed in the vent stream such that the total vent

stream to flare is measured. Flow measurements shall be taken continuously and values shall be recorded on an average one hour basis.

The flow monitor shall be calibrated according to manufacturer's instructions, or shall have a calibration check by using a second calibrated flow measurement device, annually to meet the following accuracy specifications: the flow monitor shall be +/- 5.0 percent, temperature sensor shall be +/- 2.0 percent at absolute temperature, and pressure sensor shall be +/- 5.0 mmHg.

The flow monitor shall operate at least 95 percent of the time when the flare is operational, averaged over a rolling twelve (12) month period.

11. The combustion turbines Emission Point Numbers (EPNs) GT1-A, GT1-B, GT2-A, GT2-B, GT3-A, GT3-B, GT4-A, GT4-B, GT5-A, GT5-B, GT6-A, GT6-B, (EPNs GT1-A through GT6-B) shall adhere to the following emissions standards and operating specifications.

    A. Fuel fired in the combustion turbines is limited to fuel gas supplied by the fuel gas system as defined under Special Condition No. 8.

    B. The concentration of pollutants in the exhaust gas from the turbines shall not exceed the performance standards listed in the tables below. These performance standards shall apply at all times except during periods of planned MSS. Pollutant concentrations listed in the tables below are in units of ppmvd corrected to 15 percent oxygen (O_2).

    Table 1. Combustion Turbine Performance Standards (EPNs GT1-A through GT6-B)

Pollutant	Performance Standard (ppmvd)	Compliance Averaging Period
Nitrogen Oxide (NO_x)	9.0	24-hour rolling
Carbon Monoxide (CO)	25.0	3-hour rolling
Volatile Organic Compound (VOC)	2.0	3-hour rolling

    C. Planned startup or shutdown events are limited to 60 minutes per event for each individual combustion turbine. Startup is defined as beginning when fuel is fired in the combustor from a previously unfired state and ending when turbine load exceeds 50%. Shutdown is defined as beginning when turbine load drops below 50% and ending when fuel ceases to be fired.

    D. Authorized maintenance activities include the initial commissioning of the turbines and other major dry low NO_x burner tuning sessions. Major tuning sessions are scheduled events, and would occur after the completion of initial construction, a combustor change-out, a major repair, maintenance to a combustor, or other similar circumstances.

    E. Emissions shall not exceed the maximum allowable emission rates specified in the MAERT under all operating scenarios, including periods of authorized MSS activities.

12. Fuel for the TOs (EPNs TO1, TO2, TO3, TO4, TO5, and TO6) is limited to fuel gas from the Fuel Gas System. Vent gases from condensate storage tanks shall be routed to either of TO1 or TO2. Acid gases shall be routed to the TO associated with that train.

13. Opacity of emissions from each combustion turbine and each TO authorized by this permit shall not exceed five percent averaged over a six-minute period from each stack. During periods of

startup, shutdown or maintenance, the opacity from the stacks shall not exceed fifteen percent averaged over a six-minute period.

A. Visible emission observations shall be conducted and recorded at least once during each calendar quarter while the facility is in operation, unless the emission unit is not operating for the entire calendar quarter.

B. Continuous demonstration of compliance with this special condition can be demonstrated by conducting and recording visible emissions observations during normal operations. This determination shall be made by first observing for visible emissions while each facility is in normal operation. Observations shall be made at least 15 feet and no more than 0.25 miles from the emission point(s). Up to three emissions points may be read concurrently, provided that all three emissions points are within a 70-degree viewing sector or angle in front of the observer such that the proper sun position (at the observer's back) can be maintained for all three emission points. A certified opacity reader is not required for these visible emission observations.

C. If visible emissions are observed from an emission point, then the opacity shall be determined and documented within 24 hours for that emission point using 40 CFR Part 60, Appendix A, Test Method 9. Contributions from uncombined water shall not be included in determining compliance with this condition. A certified Method 9 opacity reader is required for these determinations.

D. If the opacity limits of this Special Condition are exceeded, corrective action to eliminate the source of visible emissions shall be taken promptly and documented within one week of first observation.

E. Visible emissions or opacity observations for any source authorized by this permit shall be made upon demand of a representative of the TCEQ or any air pollution control program with jurisdiction. When such observations are required, the methods used and the observation period duration shall be as specified in this Special Condition unless otherwise specified by the person requiring the observation to be conducted.

14. Uninsulated tank exterior surfaces exposed to the sun shall be white or aluminum. The storage tanks must be equipped with permanent submerged fill pipes.

Piping, Valves, Connectors, Pumps, and Compressors - 28VHP

15. Except as may be provided for in the special conditions of this permit, the following requirements apply to the above-referenced equipment:

A. The requirements of paragraphs F and G shall not apply (1) where the VOC has an aggregate partial pressure or vapor pressure of less than 0.044 pounds per square inch, absolute (psia) at 68°F or (2) operating pressure is at least 5 kilopascals (0.725 psi) below ambient pressure. Equipment excluded from this condition shall be identified in a list or by one of the methods described below to be made readily available upon request.

The exempted components may be identified by one or more of the following methods:

(1) piping and instrumentation diagram (PID);
(2) a written or electronic database or electronic file;
(3) color coding;
(4) a form of weatherproof identification; or

(5) designation of exempted process unit boundaries.

B. Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), or equivalent codes.

C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical. New and reworked buried connectors shall be welded.

D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation. Difficult-to-monitor and unsafe-to-monitor valves, as defined by Title 30 Texas Administrative Code Chapter 115 (30 TAC Chapter 115), shall be identified in a list to be made readily available upon request. The difficult-to-monitor and unsafe-to-monitor valves may be identified by one or more of the methods described in subparagraph A above. If an unsafe-to-monitor component is not considered safe to monitor within a calendar year, then it shall be monitored as soon as possible during safe-to-monitor times. A difficult-to-monitor component for which quarterly monitoring is specified may instead be monitored annually.

E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. Gas or hydraulic testing of the new and reworked piping connections at no less than operating pressure shall be performed prior to returning the components to service or they shall be monitored for leaks using an approved gas analyzer within 15 days of the components being returned to service. Adjustments shall be made as necessary to obtain leak-free performance. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through.

Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling, both valves shall be closed. If the isolation of equipment for hot work or the removal of a component for repair or replacement results in an open ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the permit holder must complete either of the following actions within that time period;

(1) a cap, blind flange, plug, or second valve must be installed on the line or valve; or

(2) the open-ended valve or line shall be monitored once for leaks above background for a plant or unit turnaround lasting up to 45 days with an approved gas analyzer and the results recorded. For all other situations, the open-ended valve or line shall be monitored once within the 72 hour period following the creation of the open ended line and monthly thereafter with an approved gas analyzer and the results recorded. For turnarounds and all other situations, leaks are indicated by readings of 500 ppmv and must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve.

F. Accessible valves shall be monitored by leak-checking for fugitive emissions at least quarterly using an approved gas analyzer. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. If a relief valve is equipped with rupture disc, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity.

   A check of the reading of the pressure-sensing device to verify disc integrity shall be performed at least quarterly and recorded in the unit log or equivalent. Pressure-sensing devices that are continuously monitored with alarms are exempt from recordkeeping requirements specified in this paragraph. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.
   The gas analyzer shall conform to requirements listed in Method 21 of 40 CFR Part 60, Appendix A. The gas analyzer shall be calibrated with methane. In addition, the response factor of the instrument for a specific VOC of interest shall be determined and meet the requirements of Section 8 of Method 21. If a mixture of VOCs is being monitored, the response factor shall be calculated for the average composition of the process fluid. A calculated average is not required when all of the compounds in the mixture have a response factor less than 10 using methane. If a response factor less than 10 cannot be achieved using methane, then the instrument may be calibrated with one of the VOC to be measured or any other VOC so long as the instrument has a response factor of less than 10 for each of the VOC to be measured.

   Replacements for leaking components shall be re-monitored within 15 days of being placed back into VOC service.

G. Except as may be provided for in the special conditions of this permit, all pump, compressor, and agitator seals shall be monitored with an approved gas analyzer at least quarterly or be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. Seal systems designed and operated to prevent emissions or seals equipped with an automatic seal failure detection and alarm system need not be monitored. These seal systems may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.

H. Damaged or leaking valves or connectors found to be emitting VOC in excess of 500 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. Damaged or leaking pump, compressor, and agitator seals found to be emitting VOC in excess of 2,000 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. A first attempt to repair the leak must be made within 5 days and a record of the attempt shall be maintained.

I. A leaking component shall be repaired as soon as practicable, but no later than 15 days after the leak is found. If the repair of a component would require a unit shutdown that would create more emissions than the repair would eliminate, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging within 15 days of the detection of the

leak. A listing of all components that qualify for delay of repair shall be maintained on a delay of repair list. The cumulative daily emissions from all components on the delay of repair list shall be estimated by multiplying by 24 the mass emission rate for each component calculated in accordance with the instructions in 30 TAC 115.782 (c)(1)(B)(i)(II). The calculations of the cumulative daily emissions from all components on the delay of repair list shall be updated within ten days of when the latest leaking component is added to the delay of repair list. When the cumulative daily emission rate of all components on the delay of repair list times the number of days until the next scheduled unit shutdown is equal to or exceeds the total emissions from a unit shutdown as calculated in accordance with 30 TAC 115.782 (c)(1)(B)(i)(I), the TCEQ Regional Manager and any local programs shall be notified and may require early unit shutdown or other appropriate action based on the number and severity of tagged leaks awaiting shutdown. This notification shall be made within 15 days of making this determination.

J. Records of repairs shall include date of repairs, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of instrument monitoring shall indicate dates and times, test methods, and instrument readings. The instrument monitoring record shall include the time that monitoring took place for no less than 95 percent of the instrument readings recorded. Records of physical inspections shall be noted in the operator's log or equivalent.

K. Alternative monitoring frequency schedules of 30 TAC § 115.352 - 115.359 or National Emission Standards for Organic Hazardous Air Pollutants, 40 CFR Part 63, Subpart H, may be used in lieu of Items F through G of this condition.

L. Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable NSPS, or an applicable National Emission Standard for Hazardous Air Pollutants (NESHAPS) and does not constitute approval of alternative standards for these regulations.

Initial Determination of Compliance

16. Sampling ports and platforms shall be incorporated into the design of all exhaust stacks according to the specifications set forth in the attachment entitled "TCEQ Sampling Procedures Manual, Chapter 2, Guidelines for Stack Sampling Facilities." Alternate sampling facility designs may be submitted for approval by the TCEQ Regional Director.

17. The holder of this permit shall perform stack sampling and other testing as required to establish the actual quantities of air contaminants being emitted into the atmosphere from EPNs GT1-A, GT1-B, GT2-A, GT2-B, GT3-A, GT3-B, GT4-A, GT4-B, GT5-A, GT5-B, GT6-A, GT6-B, TO1, TO2, TO3, TO4, TO5, and TO6 to determine initial compliance with emission limits established in this permit. Sampling shall be conducted in accordance with the appropriate procedures of the TCEQ Sampling Procedures Manual and in accordance with the appropriate EPA Reference Methods to be determined during the pretest meeting.

    Fuel sampling using the methods and procedures of 40 CFR § 60.4415 may be conducted in lieu of stack sampling for sulfur dioxide (SO_2) or the permit holder may be exempted from fuel monitoring of SO_2 as provided under 40 CFR § 60.4365(a). If fuel sampling is used, compliance with NSPS Subpart KKKK, SO_2 limits shall be based on 100 percent conversion of the sulfur in the fuel to SO_2. Any deviations from those procedures must be approved by the Executive

Director of the TCEQ prior to sampling. The TCEQ Executive Director or his designated representative shall be afforded the opportunity to observe all such sampling.

The holder of this permit is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense.

A. The TCEQ Harlingen Regional Office shall be contacted as soon as testing is scheduled but not less than 45 days prior to sampling to schedule a pretest meeting.

   The notice shall include:

   (1) Date for pretest meeting.

   (2) Date sampling will occur.

   (3) Name of firm conducting sampling.

   (4) Type of sampling equipment to be used.

   (5) Method or procedure to be used in sampling.

   (6) Procedure used to determine turbine loads during and after the sampling period.

   The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for submitting the test reports. A written proposed description of any deviation from sampling procedures specified in permit conditions, or the TCEQ or EPA sampling procedures shall be made available to the TCEQ prior to the pretest meeting. The TCEQ Regional Director shall approve or disapprove of any deviation from specified sampling procedures. Requests to waive testing for any pollutant specified in this condition shall be submitted to the TCEQ Office of Air, Air Permits Division. Test waivers and alternate or equivalent procedure proposals for NSPS testing which must have EPA approval shall be submitted to the EPA and copied to TCEQ Regional Director.

B. Air contaminants and diluents to be sampled and analyzed include (but are not limited to)

   (1) For EPNs GT1-A, GT1-B, GT2-A, GT2-B, GT3-A, GT3-B, GT4-A, GT4-B, GT5-A, GT5-B, GT6-A, GT6-B: NO_x, CO, VOC, SO_2, ammonia (NH_3), and O_2. Fuel sampling using the methods and procedures of 40 CFR § 60.4415 or 40 CFR § 60.4365(a) may be conducted for monitoring SO_2.

   (2) For EPNs TO1, TO2, TO3, TO4, TO5, and TO6: NO_x, CO, VOC, SO_2, total particulate matter (PM), and O_2.

C. For each EPN TO1, TO2, TO3, TO4, TO5, and TO6 a VOC destruction efficiency of at least 99.9 percent or a VOC outlet concentration of 10 ppmvd or less corrected to 3 percent oxygen must be demonstrated, based upon the average of three one-hour sampling test runs. The minimum operating temperature shall be the average temperature at which compliance with the above was demonstrated.

D. Testing Conditions.

   (1) EPNs GT1-A, GT1-B, GT2-A, GT2-B, GT3-A, GT3-B, GT4-A, GT4-B, GT5-A, GT5-B, GT6-A, GT6-B shall each be tested at or above 90 percent of the maximum turbine load for the given atmospheric conditions at the time of testing. Each tested turbine load shall be identified in the sampling report.

(2) EPNs TO1, TO2, TO3, TO4, TO5, and TO6 shall each be tested at least 90 percent of the associated acid gas removal unit design gas feed rate.

E. Sampling as required by this condition shall occur within 60 days after achieving commencement of commercial operation of each respective liquefied natural gas (LNG) train, but no later than 180 days after commencement of commercial operation of each LNG train. Additional sampling may be required by TCEQ or EPA.

F. Within 60 days after the completion of the testing and sampling required herein, two copies of the sampling reports shall be distributed as follows:

(1) One copy to the TCEQ Harlingen Regional Office.

(2) One copy to the EPA Region 6 Office, Dallas.

Continuous Demonstration of Compliance

18. The holder of this permit shall install, calibrate, maintain, and operate either a continuous emissions monitoring system (CEMS), a predictive emissions monitoring system (PEMS), or else a continuous parameter monitoring system (CPMS), to measure and record the concentrations of NO_x, CO, and diluents (O_2 or carbon dioxide (CO_2)) in the turbine exhaust (EPNs GT1-A, GT1-B, GT2-A, GT2-B, GT3-A, GT3-B, GT4-A, GT4-B, GT5-A, GT5-B, GT6-A, and GT6-B). A CEMS, PEMS, or CPMS monitoring system is defined according to the definitions found in 40 CFR § 51.165.

A. A PEMS, if used, will meet all the requirements of 30 TAC § 117.8100(b) and 40 CFR, Part 75, Subpart E. These parts include requirements for data collection and analysis requirements, reliability criteria, accessibility criteria, timeliness criteria, quality assurance, missing data substitution and requirements for application for certification and recertification if necessary.

B. A CPMS, if used, will meet all the requirements of 40 CFR § 60.4340(b)(2) along with the pollutant estimation procedure in 40 CFR, Part 75, Appendix E. The requirements for performance testing, excess emissions reporting, monitoring any downtime and establishing proper parameter monitoring plan under 40 CFR, Part 60, Subpart KKKK, are also applicable.

C. A CEMS, if used, shall meet the following requirements:

(1) It shall adhere to the design and performance specifications, pass the field tests, and meet the installation requirements and data analysis and reporting requirements specified in the applicable Performance Specifications in 40 CFR Part 60, Appendix B. The CEMS shall follow the monitoring requirements of 40 CFR § 60.13.

(2) The NO_x/diluent CEMS must be operated according to the methods and procedures as set out in 40 CFR § 60.4345.

(3) The CO CEMS shall meet the appropriate quality assurance requirements specified in 40 CFR Part 60, Appendix F, Procedure 1. An equivalent quality-assurance method approved by the TCEQ may also be used. Successive quarterly audits shall occur at least two months apart.

D. The TCEQ Harlingen Regional Office shall be notified at least 21 days prior to any required relative accuracy test audit in order to provide them the opportunity to observe the testing.

E. Monitored NO_x and CO concentrations must be corrected and recorded in dimensional units and averaging times corresponding to the emission limitations in Special Condition No. 11 and the MAERT. Compliance for monitored pollutants is based on this data.

F. The monitoring device (CEMS, PEMS, or CPMS) shall be operational during 95 percent of the operating hours of the facility, exclusive of the time required for zero and span checks. If this operational criterion is not met for the reporting quarter, the holder of this permit shall develop and implement a monitor quality improvement plan. The monitor quality improvement plan shall be developed and submitted to the TCEQ Harlingen Regional Office for their approval within six months. The plan should address the downtime issues to improve availability and reliability.

A monitoring device with downtime due to breakdown, malfunction, or repair of more than 10 percent of the facility operating time for any calendar year shall be considered defective and the applicable monitoring device component(s) shall be replaced within 30 days.

Thermal Oxidizers

19. Vent gas from the Acid Gas Removal Units represented in the air permit application must be directed to one of the TO. The TO combustion chamber outlet temperatures and exhaust oxygen concentration for EPNs TO1, TO2, TO3, TO4, TO5, and TO6 shall be continuously monitored when vent gases are directed to one of the TOs. The outlet temperature and oxygen concentration must be recorded at least four times an hour (once per quarter of the hour) and averaged hourly for compliance demonstration when vent gases are directed to one of the TOs. A partial operational hour with greater than 30 minutes of data and two recorded outlet temperature and oxygen concentrations measurements shall count as a valid hour.

A. The minimum outlet temperature shall be 1400 degrees Fahrenheit until a minimum operating temperature is established by the testing required in Special Condition No. 17. The temperature measurement device shall be installed, calibrated, and maintained according to accepted practice and the manufacturer's specifications. The device shall have accuracy the greater of 1 percent of the temperature being measured or 4.5 degrees Fahrenheit.

B. Each TO shall be equipped with low NO_x burners. TO1 and TO2 shall have burners capable of controlling NOx emissions to 0.14 lb/MMBtu and TO3 through TO6 shall have burners capable of controlling NOx emissions to 0.10 lb/MMBtu.

C. The minimum exhaust oxygen concentration shall not be less than 3 percent oxygen. The oxygen monitor shall be zeroed and spanned daily and corrective action taken when the 24-hour span drift exceeds two times the amounts specified in Performance Specification No. 3, 40 CFR Part 60, Appendix B. Zero and span is not required on weekends and plant holidays if instrument technicians are not normally scheduled on those days. The oxygen monitor shall be audited in accordance with §5.1 of 40 CFR Part 60, Appendix F with the following exception to Procedure 1, § 5.1.2: the monitor may be quality-assured semiannually using cylinder gas audits (CGAs) and a relative accuracy test audit is not required once every four quarters (i.e., two successive semiannual CGAs may be conducted). An equivalent quality assurance method approved by the TCEQ may also be used. Successive semiannual audits shall occur no closer than four months. Necessary corrective action shall be taken for all CGA exceedances of ±15 percent accuracy and any CEMS downtime in excess of 5 percent

of the time when waste gas is directed to the TO. These occurrences and corrective actions shall be reported to the appropriate TCEQ Regional Director on a quarterly basis. No report is required if no corrective action was necessary. Supplemental stack concentration measurements may be required at the discretion of the appropriate TCEQ Regional Director.

Quality assured (or valid) data must be generated when waste gas is directed to the TO except during the performance of a daily zero and span check. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the TO is operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded.

20. The permit holder shall determine SO_2 emissions from each of the TOs by utilizing a mass balance of sulfur upstream and downstream of the TOs. The permit holder shall analyze gas sulfur content, at least quarterly, by sampling the gas prior to the first acid gas treatment device and by sampling the gas sulfur content after the last acid gas treatment device prior to being loaded onto a ship. The permit holder may use ASTM methods D1072, D3246, D4084, D4468, D4810, D6228, D6667, or Gas Processors Association Standard 2377 to determine sulfur content in the gas streams. Additionally, the permit holder shall monitor total feed gas flow into and out of the Acid Gas Removal Unit on an hourly basis. The flow monitor must receive an in situ third-party certification on an annual basis to demonstrate it will meet ± 5.0 percent accuracy.

Maintenance, Startup, and Shutdown

21. Sections of the plant undergoing shutdown or maintenance that requires breaking a line or opening a vessel shall be depressurized, emptied, degassed, and placed in service in accordance with the following requirements. The process equipment shall be degassed using good engineering and best management practices to ensure air contaminants are removed from the system through a control device, to the extent allowed by process equipment or storage vessel design. The facilities to be degassed shall not be vented directly to atmosphere, except as necessary to establish isolation of the work area or to monitor VOC concentration following controlled depressurization. The venting shall be minimized to the maximum extent practicable and actions taken recorded. The control device or recovery system utilized shall be recorded with the estimated emissions from controlled and uncontrolled degassing calculated using the methods that were used to determine allowable emissions for the permit application.

22. All contents from process equipment or storage tanks must be removed to the maximum extent practicable prior to opening equipment to commence degassing and maintenance. Liquid and solid removal must be directed to covered containment, recycled, or disposed of properly. If it is necessary to drain liquid into an open pan or the sump, the liquid must be covered and transferred to a covered vessel within one hour of being drained.

Recordkeeping Requirements

23. The following records must be kept at the plant for the life of the permit. All records required in this permit must be made available at the request of personnel from the TCEQ, EPA, or any air pollution control agency with jurisdiction:

    A. A copy of this permit.

B. Permit applications dated May 12, 2015, the first revision dated November 30, 2016, the second revision dated March 21, 2017, and any subsequent permit application representations submitted to the TCEQ.

C. A complete copy of the testing reports and records of the initial performance testing completed pursuant to Special Condition No. 17 to demonstrate initial compliance.

24. The following information must be maintained by the holder of this permit in a form suitable for inspection for a period of five years after collection and must be made available upon request to representatives of the TCEQ, EPA, or any local air pollution control program having jurisdiction:

A. Records of the sulfur content of the diesel fuel fired in the standby generator and fire water pump engines to show compliance with Special Condition No. 7. Fuel delivery receipts are an acceptable record.

B. Records of standby generator and fire water pump engine hours of operation to show compliance with Special Condition Nos. 5 and 6 including date, time, and duration of operation.

C. Records of pilot flame loss required by Special Condition No. 10C.

D. Records of hourly flow rates to the flare as required by Special Condition No. 10E and totals on a monthly and rolling 12-month basis.

E. The CEMS, PEMS, or CPMS monitoring data of NO_x, CO, and O_2 emissions from EPNs GT1-A, GT1-B, GT2-A, GT2-B, GT3-A, GT3-B, GT4-A, GT4-B, GT5-A, GT5-B, GT6-A, and GT6-B to demonstrate compliance with concentration limits in Special Condition No. 11 and with the emission rates listed in the MAERT.

F. Raw data files of all CEMS, PEMS, or CPMS monitoring data including calibration checks, adjustments, and maintenance performed on these systems in a permanent form suitable for inspection.

G. Records of visible emissions and opacity observations and any corrective actions taken pursuant to Special Condition No. 13.

H. Records of TO exhaust temperature and oxygen concentration as required by Special Condition No. 19 on an hourly basis.

I. Records of calculated SO_2 emissions from the thermal oxidizers, including records of gas sulfur content sampling and gas flow rates pursuant to Special Condition No. 20.

J. Records required by Special Condition No. 15 related to the leak detection and repair program.

K. Records of miscellaneous maintenance, startup and shutdown activities at the plant, including:

(1) Date, time, and duration of the event; and

(2) Emissions from the event.

Greenhouse Gas Specific Conditions

25. Monitoring, quality assurance/quality control requirements, emission calculation methodologies, record keeping, and reporting requirements related to Greenhouse Gas (GHG) emissions shall adhere to the applicable requirements in 40 CFR Part 98 and in this permit.

26. Permittee shall calculate the CO_2e emissions on a 12-month rolling basis, based on the procedures and Global Warming Potentials (GWP) contained in Greenhouse Gas Regulations, 40 CFR Part 98, Subpart A, Table A-1.

27. In lieu of the requirements of Special Condition No. 25, for a given turbine or TO the permit holder may install, calibrate, maintain, and operate a CEMS for CO_2 emission measurements. The CEMS shall meet the specifications and test procedures for CO_2 emission monitoring system at stationary sources, 40 CFR Part 98; or meet the requirements of 40 CFR Part 60, Appendix B, Performance Specification 3 and follow the monitoring requirements of 40 CFR § 60.13. The permit holder shall also measure volumetric flow and install a data acquisition and handling system to record all measurements.

28. Records of emissions of GHG, and how they were determined, in compliance with Special Condition Nos. 25, 26, and 27 must be maintained by the holder of this permit in a form suitable for inspection for a period of five years after collection and must be made available upon request to representatives of the TCEQ, EPA, or any local air pollution control program having jurisdiction.

29. Permit holder must keep records sufficient to demonstrate compliance with 30 Texas Administrative Code § 116.164. If construction, a physical change or a change in method of operation results in Prevention of Significant Deterioration (PSD) review for criteria pollutants, records shall be sufficient to demonstrate the amount of emissions of GHGs from the source as a result of construction, a physical change or a change in method of operation does not require authorization under 30 TAC §116.164(a). If there is construction, a physical change or change in the method of operation that will result in a net emissions increase of 75,000 tpy or more CO_2e and PSD review is triggered for criteria pollutants, greenhouse gas emissions are subject to PSD review.

Dated: 12-17-18

Emission Sources - Maximum Allowable Emission Rates

Permit Number 140792

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities, sources, and related activities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

Air Contaminants Data

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
TO1	TRAIN 1 THERMAL OXIDIZER	NO_X	11.52	50.46
		SO_2	1.07	4.69
		H_2SO_4	0.08	0.35
		H_2S	<0.01	<0.01
		CO	5.87	25.72
		PM	0.53	2.33
		PM_{10}	0.53	2.33
		$PM_{2.5}$	0.53	2.33
		VOC	0.38	1.68
TO2	TRAIN 2 THERMAL OXIDIZER	NO_X	11.52	50.46
		SO_2	1.07	4.69
		H_2SO_4	0.08	0.35
		H_2S	<0.01	<0.01
		CO	5.87	25.72
		PM	0.53	2.33
		PM_{10}	0.53	2.33
		$PM_{2.5}$	0.53	2.33
		VOC	0.38	1.68
TO3	TRAIN 3 THERMAL OXIDIZER	NO_X	6.41	28.08
		SO_2	1.07	4.69
		H_2SO_4	0.08	0.35
		H_2S	<0.01	<0.01
		CO	5.58	24.44
		PM	0.50	2.21
		PM_{10}	0.50	2.21
		$PM_{2.5}$	0.50	2.21

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
		VOC	0.37	1.60
TO4	TRAIN 4 THERMAL OXIDIZER	NO_X	6.41	28.08
		SO_2	1.07	4.69
		H_2SO_4	0.08	0.35
		H_2S	<0.01	<0.01
		CO	5.58	24.44
		PM	0.50	2.21
		PM_{10}	0.50	2.21
		$PM_{2.5}$	0.50	2.21
		VOC	0.37	1.60
TO5	TRAIN 5 THERMAL OXIDIZER	NO_X	6.41	28.08
		SO_2	1.07	4.69
		H_2SO_4	0.08	0.35
		H_2S	<0.01	<0.01
		CO	5.58	24.44
		PM	0.50	2.21
		PM_{10}	0.50	2.21
		$PM_{2.5}$	0.50	2.21
		VOC	0.37	1.60
TO6	TRAIN 6 THERMAL OXIDIZER	NO_X	6.41	28.08
		SO_2	1.07	4.69
		H_2SO_4	0.08	0.35
		H_2S	<0.01	<0.01
		CO	5.58	24.44
		PM	0.50	2.21
		PM_{10}	0.50	2.21
		$PM_{2.5}$	0.50	2.21
		VOC	0.37	1.60
GT1-A	TRAIN 1 GT DRIVER A	NO_X	32.40	141.91
		SO_2	0.04	0.14

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
		H_2SO_4	<0.01	0.01
		H_2S	<0.01	<0.01
		CO	50.00	219.00
		PM	7.00	30.66
		PM_{10}	7.00	30.66
		$PM_{2.5}$	7.00	30.66
		VOC	1.80	7.88
GT1-B	TRAIN 1 GT DRIVER B	NO_X	32.40	141.91
		SO_2	0.04	0.14
		H_2SO_4	<0.01	0.01
		H_2S	<0.01	<0.01
		CO	50.00	219.00
		PM	7.00	30.66
		PM_{10}	7.00	30.66
		$PM_{2.5}$	7.00	30.66
		VOC	1.80	7.88
GT2-A	TRAIN 2 GT DRIVER A	NO_X	32.40	141.91
		SO_2	0.04	0.14
		H_2SO_4	<0.01	0.01
		H_2S	<0.01	<0.01
		CO	50.00	219.00
		PM	7.00	30.66
		PM_{10}	7.00	30.66
		$PM_{2.5}$	7.00	30.66
		VOC	1.80	7.88
GT2-B	TRAIN 2 GT DRIVER B	NO_X	32.40	141.91
		SO_2	0.04	0.14
		H_2SO_4	<0.01	0.01
		H_2S	<0.01	<0.01
		CO	50.00	219.00

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
		PM	7.00	30.66
		PM_{10}	7.00	30.66
		$PM_{2.5}$	7.00	30.66
		VOC	1.80	7.88
GT3-A	TRAIN 3 GT DRIVER A	NO_X	32.40	141.91
		SO_2	0.04	0.14
		H_2SO_4	<0.01	0.01
		H_2S	<0.01	<0.01
		CO	50.00	219.00
		PM	7.00	30.66
		PM_{10}	7.00	30.66
		$PM_{2.5}$	7.00	30.66
		VOC	1.80	7.88
GT3-B	TRAIN 3 GT DRIVER B	NO_X	32.40	141.91
		SO_2	0.04	0.14
		H_2SO_4	<0.01	0.01
		H_2S	<0.01	<0.01
		CO	50.00	219.00
		PM	7.00	30.66
		PM_{10}	7.00	30.66
		$PM_{2.5}$	7.00	30.66
		VOC	1.80	7.88
GT4-A	TRAIN 4 GT DRIVER A	NO_X	32.40	141.91
		SO_2	0.04	0.14
		H_2SO_4	<0.01	0.01
		H_2S	<0.01	<0.01
		CO	50.00	219.00
		PM	7.00	30.66
		PM_{10}	7.00	30.66
		$PM_{2.5}$	7.00	30.66

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
		VOC	1.80	7.88
GT4-B	TRAIN 4 GT DRIVER B	NO_X	32.40	141.91
		SO_2	0.04	0.14
		H_2SO_4	<0.01	0.01
		H_2S	<0.01	<0.01
		CO	50.00	219.00
		PM	7.00	30.66
		PM_{10}	7.00	30.66
		$PM_{2.5}$	7.00	30.66
		VOC	1.80	7.88
GT5-A	TRAIN 5 GT DRIVER A	NO_X	32.40	141.91
		SO_2	0.04	0.14
		H_2SO_4	<0.01	0.01
		H_2S	<0.01	<0.01
		CO	50.00	219.00
		PM	7.00	30.66
		PM_{10}	7.00	30.66
		$PM_{2.5}$	7.00	30.66
		VOC	1.80	7.88
GT5-B	TRAIN 5 GT DRIVER B	NO_X	32.40	141.91
		SO_2	0.04	0.14
		H_2SO_4	<0.01	0.01
		H_2S	<0.01	<0.01
		CO	50.00	219.00
		PM	7.00	30.66
		PM_{10}	7.00	30.66
		$PM_{2.5}$	7.00	30.66
		VOC	1.80	7.88
GT6-A	TRAIN 6 GT DRIVER A	NO_X	32.40	141.91
		SO_2	0.04	0.14

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
		H_2SO_4	<0.01	0.01
		H_2S	<0.01	<0.01
		CO	50.00	219.00
		PM	7.00	30.66
		PM_{10}	7.00	30.66
		$PM_{2.5}$	7.00	30.66
		VOC	1.80	7.88
GT6-B	TRAIN 6 GT DRIVER B	NO_X	32.40	141.91
		SO_2	0.04	0.14
		H_2SO_4	<0.01	0.01
		H_2S	<0.01	<0.01
		CO	50.00	219.00
		PM	7.00	30.66
		PM_{10}	7.00	30.66
		$PM_{2.5}$	7.00	30.66
		VOC	1.80	7.88
DGEN1	TRAIN 1 ESSENTIAL SERVICE DIESEL GENERATOR	NO_X	42.42	2.12
		SO_2	0.05	<0.01
		H_2SO_4	<0.01	<0.01
		H_2S	<0.01	<0.01
		CO	23.21	1.16
		PM	1.33	0.07
		PM_{10}	1.33	0.07
		$PM_{2.5}$	1.33	0.07
		VOC	<0.01	<0.01
DGEN2	TRAIN 2 ESSENTIAL SERVICE DIESEL GENERATOR	NO_X	42.42	2.12
		SO_2	0.05	<0.01
		H_2SO_4	<0.01	<0.01
		H_2S	<0.01	<0.01
		CO	23.21	1.16

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
		PM	1.33	0.07
		PM_{10}	1.33	0.07
		$PM_{2.5}$	1.33	0.07
		VOC	<0.01	<0.01
DGEN3	TRAIN 3 ESSENTIAL SERVICE DIESEL GENERATOR	NO_X	42.42	2.12
		SO_2	0.05	<0.01
		H_2SO_4	<0.01	<0.01
		H_2S	<0.01	<0.01
		CO	23.21	1.16
		PM	1.33	0.07
		PM_{10}	1.33	0.07
		$PM_{2.5}$	1.33	0.07
		VOC	<0.01	<0.01
DGEN4	TRAIN 4 ESSENTIAL SERVICE DIESEL GENERATOR	NO_X	42.42	2.12
		SO_2	0.05	<0.01
		H_2SO_4	<0.01	<0.01
		H_2S	<0.01	<0.01
		CO	23.21	1.16
		PM	1.33	0.07
		PM_{10}	1.33	0.07
		$PM_{2.5}$	1.33	0.07
		VOC	<0.01	<0.01
DGEN5	TRAIN 5 ESSENTIAL SERVICE DIESEL GENERATOR	NO_X	42.42	2.12
		SO_2	0.05	<0.01
		H_2SO_4	<0.01	<0.01
		H_2S	<0.01	<0.01
		CO	23.21	1.16
		PM	1.33	0.07
		PM_{10}	1.33	0.07
		$PM_{2.5}$	1.33	0.07

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
		VOC	<0.01	<0.01
DGEN6	TRAIN 6 ESSENTIAL SERVICE DIESEL GENERATOR	NO_X	42.42	2.12
		SO_2	0.05	<0.01
		H_2SO_4	<0.01	<0.01
		H_2S	<0.01	<0.01
		CO	23.21	1.16
		PM	1.33	0.07
		PM_{10}	1.33	0.07
		$PM_{2.5}$	1.33	0.07
		VOC	<0.01	<0.01
SWFPA	SEAWATER FIREPUMP A	NO_X	6.75	0.34
		SO_2	<0.01	<0.01
		H_2S	<0.01	<0.01
		CO	3.51	0.18
		PM	0.21	0.01
		PM_{10}	0.21	0.01
		$PM_{2.5}$	0.21	0.01
		VOC	<0.01	<0.01
SWFPB	SEAWATER FIREPUMP B	NO_X	6.75	0.34
		SO_2	<0.01	<0.01
		H_2S	<0.01	<0.01
		CO	3.51	0.18
		PM	0.21	0.01
		PM_{10}	0.21	0.01
		$PM_{2.5}$	0.21	0.01
		VOC	<0.01	<0.01
WGFLRA	WET GAS FLARE A	NO_X	0.37	1.62
		SO_2	<0.01	<0.01
		H_2SO_4	<0.01	<0.01
		H_2S	<0.01	<0.01

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
		CO	3.17	13.90
		PM	<0.01	<0.01
		PM_{10}	<0.01	<0.01
		$PM_{2.5}$	<0.01	<0.01
		VOC	2.71	11.87
WGFLRB	WET GAS FLARE B	NO_X	0.37	1.62
		SO_2	<0.01	<0.01
		H_2SO_4	<0.01	<0.01
		H_2S	<0.01	<0.01
		CO	3.17	13.90
		PM	<0.01	<0.01
		PM_{10}	<0.01	<0.01
		$PM_{2.5}$	<0.01	<0.01
		VOC	2.71	11.87
DGFLRA	DRY GAS FLARE A	NO_X	1.23	5.38
		SO_2	<0.01	<0.01
		H_2SO_4	<0.01	<0.01
		H_2S	<0.01	<0.01
		CO	10.53	46.12
		PM	<0.01	<0.01
		PM_{10}	<0.01	<0.01
		$PM_{2.5}$	<0.01	<0.01
		VOC	8.99	39.38
DGFLRB	DRY GAS FLARE B	NO_X	1.23	5.38
		SO_2	<0.01	<0.01
		H_2SO_4	<0.01	<0.01
		H_2S	<0.01	<0.01
		CO	10.53	46.12
		PM	<0.01	<0.01
		PM_{10}	<0.01	<0.01

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
		$PM_{2.5}$	<0.01	<0.01
		VOC	8.99	39.38
FLARESMSS	WET AND DRY GAS FLARES COMBINED MSS EMISSIONS	NO_X	747.10	114.00
		SO_2	18.24	0.26
		H_2SO_4	1.40	0.02
		H_2S	<0.01	<0.01
		CO	1491.50	228.00
		PM	<0.01	<0.01
		PM_{10}	<0.01	<0.01
		$PM_{2.5}$	<0.01	<0.01
		VOC	2539.80	390.00
VENT	VENT (Unignited)	VOC	888.40	4.00
VENTIG	VENT (Ignited)	NO_X	104.30	1.10
		SO_2	<0.01	<0.01
		CO	894.40	9.40
		PM	<0.01	<0.01
		PM_{10}	<0.01	<0.01
		$PM_{2.5}$	<0.01	<0.01
		VOC	36.20	0.38
CSGENA	COMPRESSOR STATION BACKUP NATURAL GAS GENERATOR A	NO_X	0.55	0.03
		SO_2	<0.01	<0.01
		H_2SO_4	<0.01	<0.01
		CO	3.31	0.17
		PM	<0.01	<0.01
		PM_{10}	<0.01	<0.01
		$PM_{2.5}$	<0.01	<0.01
		VOC	1.10	0.06
CSGENB	COMPRESSOR STATION BACKUP NATURAL GAS GENERATOR B	NO_X	0.55	0.03
		SO_2	<0.01	<0.01
		H_2SO_4	<0.01	<0.01

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
		CO	3.31	0.17
		PM	<0.01	<0.01
		PM_{10}	<0.01	<0.01
		$PM_{2.5}$	0.05	<0.01
		VOC	1.10	0.06
CSCT	COMPRESSOR STATION CONDENSATE TANK	VOC	0.84	3.66
FUG-T	TERMINAL FUGITIVE EMISSIONS (5)	VOC	0.72	3.14
FUG-CS	COMPRESSOR STATION 3 FUGITIVE EMISSIONS (5)	VOC	0.15	0.7
PIG-CS	COMPRESSOR STATION PIGGING EMISSIONS (5)	VOC	14.53	0.17

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.
(2) Specific point source name. For fugitive sources, use area name or fugitive source name.
(3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
NO_x - total oxides of nitrogen
SO_2 - sulfur dioxide
H_2SO_4 - sulfuric acid
H_2S - hydrogen sulfide
PM - total particulate matter, suspended in the atmosphere, including PM_{10} and $PM_{2.5}$, as represented
PM_{10} - total particulate matter equal to or less than 10 microns in diameter, including $PM_{2.5}$, as represented
$PM_{2.5}$ - particulate matter equal to or less than 2.5 microns in diameter
CO - carbon monoxide
(4) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period.
(5) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.

Date: 12-17-18

Emission Sources - Maximum Allowable Emission Rates

Permit Number GHGPSDTX158

This table lists the maximum allowable emission rates of greenhouse gas (GHG) emissions, as defined in Title 30 Texas Administrative Code § 101.1, for all sources of GHG air contaminants on the applicant's property that are authorized by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities, sources, and related activities. Any proposed increase in emission rates may require an application for a modification of the facilities authorized by this permit.

Air Contaminants Data

Emission Point No. (1)	**Source Name (2)**	**Air Contaminant Name (3)**	**Emission Rates**
			TPY (4)
TO1	TRAIN 1 THERMAL OXIDIZER	CO_2 (5)	325,464
		CH_4 (5)	0.70
		N_2O (5)	0.20
		CO_2e	325,541
TO2	TRAIN 2 THERMAL OXIDIZER	CO_2 (5)	325,464
		CH_4 (5)	0.70
		N_2O (5)	0.20
		CO_2e	325,541
TO3	TRAIN 3 THERMAL OXIDIZER	CO_2 (5)	318,261
		CH_4 (5)	0.67
		N_2O (5)	0.19
		CO_2e	318,334
TO4	TRAIN 4 THERMAL OXIDIZER	CO_2 (5)	318,261
		CH_4 (5)	0.67
		N_2O (5)	0.19
		CO_2e	318,334
TO5	TRAIN 5 THERMAL OXIDIZER	CO_2 (5)	318,261
		CH_4 (5)	0.67
		N_2O (5)	0.19
		CO_2e	318,334
TO6	TRAIN 6 THERMAL OXIDIZER	CO_2 (5)	318,261
		CH_4 (5)	0.67
		N_2O (5)	0.19
		CO_2e	318,334
GT1-A	TRAIN 1 GT DRIVER A	CO_2 (5)	501,901
		CH_4 (5)	39.42

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates
			TPY (4)
		N_2O (5)	12.71
		CO_2e	506,674
GT1-B	TRAIN 1 GT DRIVER B	CO_2 (5)	501,901
		CH_4 (5)	39.42
		N_2O (5)	12.71
		CO_2e	506,674
GT2-A	TRAIN 2 GT DRIVER A	CO_2 (5)	501,901
		CH_4 (5)	39.42
		N_2O (5)	12.71
		CO_2e	506,674
GT2-B	TRAIN 2 GT DRIVER B	CO_2 (5)	501,901
		CH_4 (5)	39.42
		N_2O (5)	12.71
		CO_2e	506,674
GT3-A	TRAIN 3 GT DRIVER A	CO_2 (5)	501,901
		CH_4 (5)	39.42
		N_2O (5)	12.71
		CO_2e	506,674
GT3-B	TRAIN 3 GT DRIVER B	CO_2 (5)	501,901
		CH_4 (5)	39.42
		N_2O (5)	12.71
		CO_2e	506,674
GT4-A	TRAIN 4 GT DRIVER A	CO_2 (5)	501,901
		CH_4 (5)	39.42
		N_2O (5)	12.71
		CO_2e	506,674
GT4-B	TRAIN 4 GT DRIVER B	CO_2 (5)	501,901
		CH_4 (5)	39.42
		N_2O (5)	12.71
		CO_2e	506,674

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates TPY (4)
GT5-A	TRAIN 5 GT DRIVER A	CO_2 (5)	501,901
		CH_4 (5)	39.42
		N_2O (5)	12.71
		CO_2e	506,674
GT5-B	TRAIN 5 GT DRIVER B	CO_2 (5)	501,901
		CH_4 (5)	39.42
		N_2O (5)	12.71
		CO_2e	506,674
GT6-A	TRAIN 6 GT DRIVER A	CO_2 (5)	501,901
		CH_4 (5)	39.42
		N_2O (5)	12.71
		CO_2e	506,674
GT6-B	TRAIN 6 GT DRIVER B	CO_2 (5)	501,901
		CH_4 (5)	39.42
		N_2O (5)	12.71
		CO_2e	506,674
DGEN1	TRAIN 1 ESSENTIAL SERVICE DIESEL GENERATOR	CO_2 (5)	234
		CH_4 (5)	0.14
		N_2O (5)	0.00
		CO_2e	238
DGEN2	TRAIN 2 ESSENTIAL SERVICE DIESEL GENERATOR	CO_2 (5)	234
		CH_4 (5)	0.14
		N_2O (5)	0.00
		CO_2e	238
DGEN3	TRAIN 3 ESSENTIAL SERVICE DIESEL GENERATOR	CO_2 (5)	234
		CH_4 (5)	0.14
		N_2O (5)	0.00
		CO_2e	238
DGEN4	TRAIN 4 ESSENTIAL SERVICE DIESEL GENERATOR	CO_2 (5)	234
		CH_4 (5)	0.14

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates
			TPY (4)
		N_2O (5)	0.00
		CO_2e	238
DGEN5	TRAIN 5 ESSENTIAL SERVICE DIESEL GENERATOR	CO_2 (5)	234
		CH_4 (5)	0.14
		N_2O (5)	0.00
		CO_2e	238
DGEN6	TRAIN 6 ESSENTIAL SERVICE DIESEL GENERATOR	CO_2 (5)	234
		CH_4 (5)	0.14
		N_2O (5)	0.00
		CO_2e	238
SWFPA	SEAWATER FIREPUMP A	CO_2 (5)	37
		CH_4 (5)	0.02
		N_2O (5)	0.00
		CO_2e	38
SWFPB	SEAWATER FIREPUMP B	CO_2 (5)	37
		CH_4 (5)	0.02
		N_2O (5)	0.00
		CO_2e	38
WGFLRA	WET GAS FLARE A	CO_2 (5)	3,525
		CH_4 (5)	0.00
		N_2O (5)	0.00
		CO_2e	3,525
WGFLRB	WET GAS FLARE B	CO_2 (5)	3,525
		CH_4 (5)	0.00
		N_2O (5)	0.00
		CO_2e	3,525
DGFLRA	DRY GAS FLARE A	CO_2 (5)	11,697
		CH_4 (5)	0.00
		N_2O (5)	0.00
		CO_2e	11,697

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates TPY (4)
DGFLRB	DRY GAS FLARE B	CO_2 (5)	11,697
		CH_4 (5)	0.00
		N_2O (5)	0.00
		CO_2e	11,697
FLARESGHGMSS	WET AND DRY GAS FLARES COMBINED GHG MSS EMISSIONS	CO_2 (5)	149,415
		CH_4 (5)	0.00
		N_2O (5)	0.00
		CO_2e	149,415
VENT	VENT (Unignited)	CO_2 (5)	163
		CH_4 (5)	78.84
		N_2O (5)	0.00
		CO_2e	2,134
VENTIG	VENT (Ignited)	CO_2 (5)	2,328.00
		CH_4 (5)	7.58
		N_2O (5)	0.00
		CO_2e	2,518
CSGENA	COMPRESSOR STATION BACKUP NATURAL GAS GENERATOR A	CO_2 (5)	22.27
		CH_4 (5)	0.01
		N_2O (5)	0.01
		CO_2e	26
CSGENB	COMPRESSOR STATION BACKUP NATURAL GAS GENERATOR B	CO_2 (5)	22.27
		CH_4 (5)	0.01
		N_2O (5)	0.01
		CO_2e	26
CSCT	COMPRESSOR STATION CONDENSATE TANK	CO_2 (5)	0.13
		CH_4 (5)	2.07
		N_2O (5)	0.00
		CO_2e	52
FUG-T	TERMINAL FUGITIVE EMISSIONS	CO_2 (5)	7.23
		CH_4 (5)	224.75

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	**Source Name (2)**	**Air Contaminant Name (3)**	**Emission Rates**
			TPY (4)
		N_2O (5)	0.00
		CO_2e	5,626
FUG-CS	COMPRESSOR STATION 3 FUGITIVE EMISSIONS	CO_2 (5)	0.15
		CH_4 (5)	63.3
		N_2O (5)	0.00
		CO_2e	1,583
PIG-CS	COMPRESSOR STATION PIGGING EMISSIONS	CO_2 (5)	0.6
		CH_4 (5)	15.7
		N_2O (5)	0.00
		CO_2e	393

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.
(2) Specific point source name. For fugitive sources, use area name or fugitive source name.
(3) CO_2 - carbon dioxide
N_2O - nitrous oxide
CH_4 - methane
CO_2e - carbon dioxide equivalents based on the following Global Warming Potentials (1/2015): CO_2 (1), CH_4 (25), N_2O (298)
(4) Compliance with annual emission limits (tons per year) is based on a 12-month rolling period. These rates include emissions from maintenance, startup, and shutdown.
(5) Emission rate is given for informational purposes only and does not constitute enforceable limit.

Date: 12-17-18